

REMARKS

The Official Action of 16 May 2008 has been carefully considered and reconsideration of the application as amended is respectfully requested.

Applicants respectfully request that the non-elected claims be held in abeyance until such time as the application is otherwise in condition for allowance, at which time the non-elected claims will be canceled without prejudice.

The claims stand rejected under 35 USC 103(a) as allegedly being unpatentable over EP 0209241 and Bamoharram in view of Roy. Applicants respectfully traverse this rejection.

The claims have been amended to require that the heteropoly acid catalyst comprise vanadotungstic acid. None of the cited prior art references shows or suggests a process as claimed for the preparation of 2- and 4- picolines by reacting acetaldehyde and ammonia in the presence of a vanadotungstic acid catalyst. (Note: Bamoharram is not a prior art reference since it was published in 2006, i.e. after the filing of the present application.) This was discussed in detail in Applicants' Amendment filed on 5 March 2008, the contents of which are incorporated herein by reference.

The Examiner has now referred to Roy for the proposition that, in the

process of preparation of 2- and 4- picolines, the use of either zeolite or heteropoly acid catalysts are interchangeable, but she respectfully has not pointed to any specific portion of the reference for this teaching. In fact, Roy et al teach only metal oxide modified silico-alumina and zeolites as catalysts for the preparation of 2- and 4-picoline by reaction of acetaldehyde with ammonia. The metal oxide modified silico-alumina catalysts taught are $\text{SiO}_2\text{-A}_1\text{O}_3$: CdO , $\text{SiO}_2\text{-A}_1\text{O}_3$: ZnO and $\text{SiO}_2\text{-A}_1\text{O}_3$: ThO_2 . The present invention recites completely different catalysts i.e. heteropolyacid catalysts comprising Vanadotungstic acid.

In the absence of anything in the cited references to show or suggest the use of the claimed catalyst in the preparation of picolines from acetaldehyde and ammonia as claimed, the references cannot be considered to set forth even a *prima facie* case of obviousness for the invention as claimed. As discussed in Applicants' Amendment of 5 March 2008, EP 0209241, the invention as defined by all of the claims recites the preparation of picoline by **reacting acetaldehyde and ammonia in the presence of a heteropoly acid, i.e. Vanadotungstic acid, as support catalyst**. This is based at least in part upon Applicants' finding that the claimed reaction can obtain a yield of 50-70% (see specification at Examples 1-3) in an eco-friendly process. The Examiner contends that the reference teaches a method of making 2- and 4- picolines from **acetaldehyde and ammonia in the presence of a heteropolyacid catalyst**, but she has respectfully not pointed to any portion of the reference that teaches this, and Applicants can find no such teaching in the reference.

In fact, EP 0209241 teaches a process of preparation of pyridines and pyridine bases by **reacting ethanol and ammonia** (molar ratio: 0.5 to 2.5) in vapor phase in the presence of heteropoly acid and gamma alumina support at 350-500°C. The **ethanol and ammonia** is vaporized and preheated separately and then fed into a catalytic reactor (Examples 1 and 2).

Applicants respectfully note that EP 0209241 also describes a **prior art** process in which pyridine and pyridine base have been produced by a cyclo-condensation process in which an aldehyde is treated with ammonia in the vapor phase at elevated temperature and pressure in the presence of a catalyst (page 1, lines 17-25). However, the reference does **not** describe the use of heteropoly acid in the **prior art** process and, in fact, the prior art processes did not use the claimed heteropoly acid as support catalyst in the claimed reaction. See present specification at page 2, lines 27-30 ("The reaction of acetaldehyde or certain other low molecular weight aldehydes and ammonia either in the absence or presence of methanol and/or formaldehyde to yield pyridine and alkyl derivatives thereof has heretofore been carried out in the presence of amorphous silica-alumina composites containing various promoters.").

In short, EP 0209241 does not teach, and in fact teaches away from, the use of acetaldehyde and ammonia for the preparation of picoline with (or without) the claimed catalyst in the process described therein. Compare EP 020241 at page 1, line 17 to page 2, line 3, with EP 020241 at page 2, lines 4-13. Accordingly, there respectfully would have been no motivation or in the absence

of the hindsight provided by the present specification, rationale to modify EP 020241 in the manner proposed.

In view of the above, Applicants respectfully submit that the prior art rejection of record has been overcome and respectfully requests withdrawal thereof. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted

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